Saskatchewan Agriculture and Food

WINTER SWATH GRAZING 2006

Introduction

Swath grazing annual cereal crops continues to be adopted by livestock producers as a method of lengthening the grazing season. This method of providing feed for beef cows during fall and early winter has proven to be both physically possible and economically viable.

Beef cows are capable of foraging through the snow, provided an adequate feed supply has been stockpiled.

For swath grazing to be successful, good management is required. Growing the crop, metering the windrows, feed quality, water sources and shelter are important elements that need to be carefully planned and/or monitored. This publication describes the management practices to ensure swath grazing is carried out successfully, without sacrificing animal health and productivity.

Selecting Cattle

The majority of swath grazing during winter months has been done with dry mature beef cows in good body condition. These animals have a lower feed quality requirement compared to calves, cows with calves, and young, old or thin cows.

Potentially, any class of livestock can be swath grazed. The important factors to consider are temperatures, snow conditions, feed quality, feed requirements and body condition of the livestock. In some conditions, supplemental feeding and extra shelter may be required.

Producers have found some animals cannot adapt to swath grazing during the winter months. It is common that a number of cows have to be sold, culled, or managed with traditional winter feeding to remain productive. Depending upon the herd type and previous culling criteria, the percentage of cows that cannot adapt may be quite high. Producers need to evaluate their herd before starting aggressively into an extended swath grazing season. Generally, small and medium framed livestock with good hair coats have the ability to adapt more successfully than those without these traits.

Choosing a Field

Field selection is important, especially when producers are first trying this practice with inexperienced cattle. Regardless of experience, site selection becomes more important as winter advances with more snow and colder temperatures. Consider the following points:

- The site should be close to headquarters, or wherever there is stored feed and machinery available to supply the site. During days of

extreme cold and wind chill, cattle may need to be fed if they will not go out to graze. However, this is not always necessary as livestock will graze at night when the wind speed drops.

- The site should be close to a handling facility where animals that are losing condition can be sorted and removed.

- The livestock need access to shelter from the wind. This can be natural bush, planted shelterbelts, permanent windbreak fences, or portable windbreak fences.

- As snow accumulates, a relatively level field is preferred. On a rolling landscape, wind can create snowdrifts and bury feed in low areas.

- A winter water source will be needed if snow is not available, or the snow becomes hard-packed and crusted.

CROP SELECTION

A. Cool Season Annual Cereals

Most crops used for swath grazing are spring cereals. Oats and barley are common choices, with wheat, rye and triticale as other options. Research has shown that high yielding grain varieties generally produce high forage yields. The exceptions are the semi-dwarf varieties with short straw. These varieties should not be used.

Some varieties of oats (CDC Bell, CDC Baler, AC Murphy, Foothills) and barley (Virden, Lacombe, AC Ranger, AC Hawkeye, Westford, Dillon, CDC Cowboy) are promoted as forage varieties. They tend to have wider leaves, better leaf retention, and remain green later in the season. Smooth awn barley varieties are preferred, as rough awns may lodge in a cow's mouth and cause lesions.

Oats or barley can be mixed with winter cereals such as fall rye, winter wheat, or winter triticale. A winter annual seeded in spring remains vegetative during the first year, so the feed quality in the windrow will be higher. Also, the winter cereal re-growth after cutting will provide high quality forage when the cattle are allowed into the windrows. The winter annuals will also be available for grazing the following spring. A suggested seeding rate for the winter annual in a mixture is 15-20 lb./acre. Fall rye has the greatest winter hardiness.

B. Annual Legumes

Many greenfeed and silage trials have compared cereals alone with cereal/legume combinations. The results are variable. In some trials, the cereal/legume combination has greater yield and/or quality compared to cereals alone, and in others, there are no differences.

There is limited experience with cereal/legume combinations for swath grazing. In years with wet fall conditions, the legume quickly moulded.

At this point, the inclusion of a legume for swath grazing is not recommended.

C. Warm Season Annuals

Warm season annuals (Crown millet, Siberian millet, Golden German millet, Sorghum-Sudan grass, corn) are receiving more attention as potential crop choices for swath grazing. With swath grazing, seeding date is delayed until approximately the second week of June in order to delay the cutting date into fall. Warm season crops can

tolerate the higher temperatures of mid-summer, and are more efficient at converting limited soil moisture to forage dry matter when growing conditions are favourable.

From Saskatchewan trials, Crown, Siberian, and Golden German millet appear to be the better agronomic and economic choices for swath grazing. Corn has the greatest yield potential of all crops, but also has the highest input costs/acre. Because the yields of corn are quite variable, corn is a higher risk crop choice.

Winter Swath Grazing (WSG)

- One of several options for economically extending the grazing season.
- Forage yield and quality of WSG are satisfactory based on present information.
- Successful WSG requires careful planning and monitoring, particularly when starting for the first time.

The millets have significant differences in maturity. Generally, the later maturing millets have greater yield potential because they grow more days during the summer. Days from seeding to heading are in the following ranges: Crown - 50-60, Siberian - 65-75, Golden German - 75-90 days.

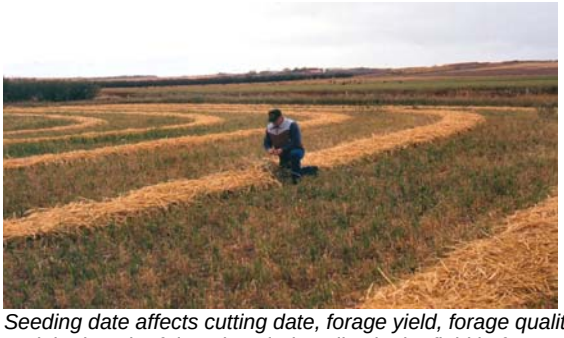
Plant development of warm season crops is relatively slow during the first five to six weeks, and stands are susceptible to weed pressure during this time. Warm season crops require warm soil temperatures in spring (minimum daily soil temperature of 10°C).

Practices and conditions which aid this are pre-seeding tillage, summerfallow, and fields with low crop residue.

D. Perennials

A few producers have experimented with perennial forage re-growth for swath grazing. After haying or early season grazing, the second growth is allowed to stockpile. Prior to or immediately after a killing frost, the stand is windrowed.

Alfalfa usually has greater re-growth potential than the grasses, so most swath grazing of perennial forage has occurred on fields with a high percentage of alfalfa. There is concern the stand may be injured or killed due to livestock traffic, especially beneath the windrow. There is also concern about the potential for reduced yield the following year, due to less snow cover.



Seeding date affects cutting date, forage yield, forage quality and the length of time the windrow lies in the field before grazing.

In one trial, hay yield was measured beneath and between windrows following a winter of swath grazing. The stand was dominated by alfalfa, and the second growth cut in September created large windrows. In this circumstance, the livestock were not managed in order to clean up the feed, and the following spring a thick, heavy mat remained. The hay yield where the windrow lay was reduced approximately 20 per cent compared to between the windrows. It appeared the yield loss was caused because the windrows were not adequately grazed.

In cases where producers have grazed the windrows, they believe plants are not injured and hay yield is not reduced beneath the windrow if the soil is frozen during grazing. If grazing occurs when the soil surface becomes soft and wet, as during a mid-winter thaw, significant damage can occur. The economics of swath grazing high-quality second cut alfalfa on a free choice basis needs to be considered. In years of high feed prices, the windrows should probably be baled and sold, or fed on a metered basis with lower quality feeds.

Swath grazing perennial forages needs further research to determine the economic feasibility and associated risks.

Seeding Date – Cool Season Cereals
The seeding date is an important consideration for swath grazing, as it has an effect on the cutting date, forage yield and forage quality.

A trial in south east Saskatchewan was conducted between 1997-2000 to determine the optimum seeding date for swath grazing oats and barley. The trial compared forage yield, forage quality at cutting, and forage quality at grazing. Nine site years of data were collected. The average seeding dates compared were June 3, June 20, and July 3. The average cutting dates were August 10, August 24, and September 7, for the three seeding dates respectively. The conclusions of the trial were as follows:

- Dry matter yield normally decreases as seeding date is delayed. This is an expected result for cool season crops in Saskatchewan. Average yield for the seeding dates were: June 3 – 4,618 lb./acre, June 20 – 3,914 lb./acre, July 3 – 3,503 lb./acre. On one occasion, the July 3 seeding date had the highest yield. This occurred on a site with a very dry spring followed by above average rainfall in summer. On another occasion, the June 20 seeding date had the highest yield. Other swath grazing trials and farm demonstrations confirm that yield normally decreases as the seeding date is delayed. The general rule of thumb for cool season crops is as follows: for each week that seeding is delayed after May 25, yield is reduced by 10 per cent. In drier regions, the date is more likely to be May 15.

- Average forage quality increases as the seeding date is delayed. Generally, as the yield of a crop decreases due to a lack of moisture, the quality increases. Average crude protein values for the seeding dates were: June 3 – nine per cent, June 20 – 10.6 per cent, July 3 - 11.2 per cent. Average total digestible nutrients for the seeding dates were: June 3 – 57.5 per cent, June 20 – 60.6 per cent, July 3 – 60.8 per cent. All percentages are basis dry matter.

- The optimum seeding date for yield and quality depends on the nutrient requirements of the livestock being fed, the fertility of the soil, and moisture conditions during the growing season. In this trial, June 10 to June 15 appeared to be the optimum seeding date for swath grazing cows in second and third trimester. Other trials and farm demonstrations recommend an early-mid June seeding date in the Brown and Dark Brown soil zones, and a mid to late June seeding date in the Black and Grey Wooded soil zones.

- The forage from the later seeding dates was more palatable to the livestock.

Seeding Date – Warm Season Cereals
Warm season crops are slow to develop during the first five to six weeks, and are relatively intolerant of competition from weeds. For quick development, warm season crops should be seeded after minimum daily soil temperature, usually in early morning, has reached 10°C.

When soil temperatures are warm enough, Golden German millet should be seeded in early June to allow the crop to reach maximum yield potential before fall frost.

Seed and Fertilizer Rates
Seeding rate for oats and barley should be increased about 25 per cent above the rate recommended for grain production. This ensures stand density and generally produces a stem that is less coarse and more palatable. Recommended seeding rate for the millets is 20 lb./acre.

Fertilizer rate is similar for cereal grain production, based on a soil test to determine the optimum level of nutrients required. When fields are heavily fertilized or manured, excess nitrates can accumulate in plants that are under stress from drought, frost, or long periods of cool, cloudy weather. If the stress is removed and the plants recover, nitrate levels should return to normal within several days.

Weed Control
Prior to the delayed seeding date for swath grazing, producers have a longer period of time to control perennial weeds. In-crop weed control may not be necessary. In many case, the annual weeds have been cut with the crop and consumed by the livestock during grazing. If heavy weed pressure warrants herbicide application, consult the label for grazing and feeding restrictions.

SWATHING
A. Crop Stage
The optimum stage for cutting depends upon the nutrient requirements of the livestock at the time they are grazing the windrows. A crop cut in earlier stages will have relatively higher quality, lower yield, and increased palatability. A crop cut in later stages will have relatively lower quality, higher yield, and decreased palatability.

The general recommendation is to cut barley at the soft dough stage, and oats at the milk stage. Millets can be cut three to five weeks after heading. The later cutting of millets results in higher yield when adequate soil moisture for crop growth is available, and slightly reduced feed quality.

There have been situations where damaged mature cereal crops were cut with the intention of salvaging by swath grazing. Care must be taken to meter the feed to prevent grain overload, as cows will consume the mature grain heads first.

B. Early Frost
The cutting date is usually pre-determined by the seeding date. However, an early fall frost may require a late seeded crop to be cut sooner than

planned. The crop should be cut the day before, or the morning after a killing frost (-4° to -6°C) to reduce the risk of nitrate accumulating in the feed. Under adverse growing conditions, such as near freezing temperatures, cereal crops can accumulate higher levels of nitrate. As long as a killing frost is not forecasted, allow the crop to grow for

five to seven days after temperatures warm. This will allow the plants to convert accumulated nitrate into protein. This reduces the total amount of nitrate present in the plants.

If a risk of nitrate accumulation exists, have the cut feed analyzed to determine the amount of nitrate present. Cattle can become accustomed to feeds with high levels of nitrate. Know the level of nitrate present and allow cattle time to adjust to feeds with high levels of nitrate. Nitrate levels tend to decrease in swaths exposed to weathering. Sample the swaths for nitrate closer to the time of grazing to obtain more accurate results.

C. Cutting Equipment

Most producers cut the crop with a swather rather than a haybine. With swath grazing, there is no need to crimp the material to speed the drying process. There has been discussion whether crimped stems would be more prone to weathering. No trials have been conducted to compare crimping and swathing.

The optimum cutting width and windrow size depends on snow conditions when grazing occurs. On fields where swath grazing is planned prior to mid-November, there is a low probability that snow conditions will be adverse. In this case, a narrow cutting width is preferred, because the manure will be spread more evenly across the field. A wide cutting width and a large windrow are a safeguard if grazing is planned for mid-winter when snow could potentially be deep and/or crusted. A larger windrow is easier for livestock to find, and has more feed once it is uncovered.

GRAZING MANAGEMENT

A. Feed Quality and Livestock Requirements

Prior to grazing, a representative sample from each field should be collected and sent for feed analysis. This will determine whether the feed quality is adequate for the needs of the livestock being grazed. There may be situations when supplemental feed is required. Producers are encouraged to consult with a livestock nutritionist.

In the majority of swath grazing trials and farm demonstrations, feed quality has been adequate or above the nutrient requirements of pregnant beef cows.

Muddy soil conditions can result in excessive trampling losses. Livestock need to feed elsewhere until the soil dries or freezes.

B. When to Start Grazing

Grazing can potentially begin in early fall as soon as the crop is windrowed. However, in early fall, producers may graze lower cost sources of feed, such as stockpiled perennial forage and crop residues. Feed sources that are dispersed (rather than in rows or piles) are relatively easy for livestock to graze prior to snowfall.

Grazing normally begins when snow depth prevents grazing other sources of feed, or when other sources of feed are depleted. Experienced cows can readily uncover windrows underneath the snow. Inexperienced cows should be introduced to swath grazing prior to heavy snowfall.

C. Metering the Windrows

Controlling livestock access to the windrows is critical for successful swath grazing. Smaller areas and frequent moves (one to two days) will ensure a more uniform diet and less feeding loss, but require more time to move fence. In many cases, producers have found a four to five day supply of feed given with each move is optimum. Larger feed supplies (14-21 days) have been given at a time and grazed successfully, but the risks are greater. Consider the following points:

- When livestock are given access to a new area, they scatter and pick through all the windrows, eating the higher quality material first. If livestock are moved at 20 day intervals, feed quality during the last 10 days could potentially be lower than the livestock requirements. This could be an important consideration during cold temperatures.

- Even when snow is relatively deep, initially when livestock are turned into an area, they will open up and start grazing all the windrows. If the snow drifts, it can pack in and cover the windrows again. The drifted snow may be too hard for the livestock to graze through, resulting in reduced grazing during winter. In some cases, partially grazed windrows have been salvaged with spring grazing.

- Dry or frozen soil conditions help to keep trampling losses to a minimum. When the soil is wet and muddy, it may be necessary to move the livestock each day to minimize trampling. In one case, a producer stopped swath grazing for a week and fed bales because of excessive trampling loss in muddy soil. When the soil froze again, the livestock were returned to swath grazing.

- The livestock can be encouraged to graze the last of the available material by feeding bales or silage prior to moving. As the animals remain on an area for an extra day or two, they keep returning to the windrows to finish the grazing.

Fencing

A temporary electric fence is the easiest and cheapest way to control livestock access to windrows. Once cattle learn to respect an electric fence, it becomes an effective tool for control.

Temporary electric fence is essential for efficient use of the windrows.

Energizers need to have plenty of power. Where electricity is available, 110 volt units are recommended for cost, reliability, and low maintenance. Battery-powered energizers need to be checked and recharged on a regular basis. A heavy duty, deep cycle battery should be used. Put the battery in an insulated box for further protection and longer use. If using a solar-powered fence, place the panels in open sunlight and keep them free of snow. Check frequently to ensure there is adequate power, and keep backup batteries available.

Good grounding with proper ground rods is essential. The insulating factor of snow and frozen soil can restrict the fence's ability to deliver a shock. In

many cases, one wire has been adequate. Some cases may require a two-wire fence where one wire is electrified, and one is grounded.

Producers are commonly using polywire or polytape on a reel. These products are visible, durable, and very easy to roll up and move to the next area to be grazed.

There are numerous options for posts. Wooden posts can be pounded in the ground in the fall before frost, and pulled in the spring after frost. Rebar and fibreglass posts can be set in winter using a cordless drill to dig the hole. Rebar has also been fastened upright onto portable discs. If snow conditions are suitable, posts can be held upright simply by pushing them into the snow. Good insulators on the posts are recommended in all cases.

Grazing in the Snow

Experienced cows can graze through two feet of soft snow. Normally, the

The yardstick in front of the cow measures 20 inches of snow on top of the windrow.

snow remains relatively soft, on top of and around a windrow, prior to grazing. Once grazing begins and the windrow is opened up, snow drifting over top can make grazing difficult or impossible. Severely crusted snow prior to grazing is also a potential problem. At some point, the animal's nose will become tender and lower leg hair can be rubbed off. When this happens, either start feeding or move the livestock to a new set of windrows.

When conditions are adverse, it may be necessary to blade snow off the windrows or drive on the windrow to break a crust. Some fields will have low lying areas and other places where snow can accumulate. If the field is planned for mid-winter grazing when snow could potentially be deep, these areas can be baled or grazed earlier in fall.

Rain followed immediately by heavy wet snow and freezing temperatures made swath grazing difficult in Southeast Saskatchewan in the fall of 2000. A crowbar was used to loosen the bottom half of the windrow off the soil surface.

A significant threat to swath grazing is rain followed by wet snow. On November 1, 2000, south east Saskatchewan had one to three inches of rain followed by 18 inches of wet snow and freezing temperatures. The rain made the topsoil soft and muddy. This in itself would not have been a problem, as freezing temperatures after the rain would have frozen the soil. However, the snow acted as insulation and prevented the soil from freezing.

When grazing began, the livestock opened the windrows and pushed snow into the water-soaked feed. They also pushed feed into the mud. The windrow became an ice pack overnight. In many cases, utilization was about 50 per cent during winter. Producers were able to salvage about half of the remaining material with spring grazing.

A good option during adverse grazing conditions is to meter the feed using short intervals of one to two days.

Grazing in spring is an option for cleaning up the windrows, however, producers should strive to have the windrows cleaned up during the initial grazing.

Snow as a Water Source

The University of Alberta has conducted several studies using snow as a water source for cattle. Pregnant cows using snow as their only water source were compared to cows with access to water. The differences in subcutaneous fat, calf's birth weight and calf's weaning weight were not significantly different. However, it is recommended that lactating cows have access to water.

The following points concern snow as a water source:

- Inexperienced cows need to be trained. It will take one to three days for them to learn to eat snow.
- The snow needs to be relatively soft. Trampled, drifted or crusted snow is difficult to consume and not reliable.
- The snow should be near the feed. Livestock alternate feeding periods with snow intake. They need access to snow at all times during the day.
- Cows eat enough snow to equal normal water intake.
- Monitor the animals and snow conditions closely. If the livestock show signs of stress from lack of water, provide an adequate water source.

Feed Quality Loss from Cutting to Grazing

The 1997 - 2000 swath grazing trial, previously discussed in the section "Seeding Date," measured feed quality loss in the windrow from cutting to grazing. Average cutting dates for the June 3, June 20 and July 3 seeding dates were August 10, August 24 and September 7 respectively. In all cases, the windrows were grazed after freeze-up in November. In some cases, grazing did not occur until January.

It was expected the windrows cut in early August would lose significantly more feed quality due to weathering, especially in a wet fall. However, this did not happen. The fall of 1998 was very wet and humid, and the feed quality losses were similar to those in dry years after cutting.

Average crude protein losses were 0.6 to 0.9 percentage points. Average total digestible nutrient losses were 2.9 to 3.6 percentage points. Considering long-term average feed costs, at no time did the economic loss of feed quality in the windrow justify the cost of baling the windrow.

Carrying Capacity

Swath grazing trials and farm demonstrations report a very wide range in carrying capacity, from 28 to 180 cow days/acre. This large variation is due to differences in crop yield, cow size, temperatures during grazing, and grazing losses.

Forage yield can be measured by clipping small areas and weighing the material after it is dry. An alternative is to estimate forage yield by using a formula based on projected grain yield. With barley, the whole plant weight at soft dough stage is approximately double the grain yield at maturity. For

example, suppose a barley crop at the soft dough stage is projected to yield 50 bushels/acre grain if it is allowed to mature. The grain yield is 50 bushels/acre X 48 lb./bushel = 2,400 lb./acre. Therefore, the whole plant yield at soft dough stage is about 4,800 lb./acre. Because of the cutting height of the swather, the yield in the windrow should be approximately 4,400 lb./acre. This formula is based on average crop height. Short stands would yield less forage relative to grain, and tall stands would yield more forage relative to grain.

Utilization rate of the forage depends on livestock intake and ungrazed or wasted feed. Daily dry matter intake rates are normally considered 2.6 per cent of body weight/day. A cow weighing 1,300 pounds can be expected to consume about 34 pounds of dry matter forage per day.

Swath grazing trials report a wide variation in utilization rates, from 1.9 to 5.0 per cent of body weight per day. The low utilization rates occur during mild temperatures when very little feed is left ungrazed. The high utilization rates occur during very cold temperatures and adverse snow conditions, or during muddy conditions when a significant amount of forage is left ungrazed or trampled. In many cases, windrows are grazed again the following spring to salvage the leftover forage.

Wildlife Considerations

Producers should assess potential conflicts with wildlife before swath grazing. Problems are most often associated with elk and white-tailed deer, but geese have caused problems in some cases. In a swath grazing survey, 23 per cent of producers reported wildlife damage to windrows. Most of these occurred in the Black and Grey Wooded soil zones.

Deer and elk will consume feed and foul the windrow. They will also spread and trample the windrow, allowing snow to sift over top and pack in. This makes it more difficult for livestock to graze afterward. It is reported that elk and deer prefer oats compared to barley.

The severity of the winter and the amount of native feed available influence what deer and elk choose as a feed source. In areas where there is potential for problems, producers should plan to have the windrows grazed by early winter.

In Saskatchewan, the Big Game and Waterfowl Crop Compensation Program through the Saskatchewan Crop Insurance Corporation does not cover wildlife damage to swath graze windrows.

Economics

The economics of swath grazing has been analysed in many different ways. A conclusive analysis for all producers cannot be reached, because each operation has a unique set of resources and different costs of production.

The following costs and savings are points to consider when determining if swath grazing is an economically viable option.

Costs

- Forage yield in most locations will probably be reduced because of the delayed seeding date. When a producer seeds a cool season annual cereal, they have the option of seeding in early spring and baling the greenfeed, or seeding in mid-June and swath grazing. Delayed seeding with cool season crops will

normally reduce forage yield. Current cereal crop research in Saskatchewan indicates delayed seeding from May 25 to June 15 can be expected to cause a grain yield reduction of about 20 to 25 per cent. Forage yields would likely be reduced by the same amount. Trials in Alberta confirm the same general yield reductions, with a range of 10 to 50 per cent. In some cases, delayed seeding has resulted in greater yields, but this does not often happen.

- Future work will examine new varieties of warm season annuals seeded in mid-June. If these crops produce yields similar to cool season annuals, seeded in early spring, and if seeding costs are similar, they will be excellent alternatives.

- Internal electric fencing is essential to control grazing of the windrows.

- Feed quality loss in the windrow is minimal, even with significant rainfall.

Savings

- Swath grazing can save baling, hauling, stacking and feeding the bales. A project in north west Saskatchewan from 1996-1999 compared the economics of greenfeed and swath grazing on 15 farms. The cost of baling, hauling, stacking and feeding large round bales varied significantly from one operation to another. The range was $13.64 to $47.17 per bale, with an average of $25.18 per bale.

- Swath grazing can save some or all of the bedding and manure removal costs. Average costs are $25.00 per cow for a winter.
- Mid-June seeding may allow more effective perennial weed control in spring.

- The crop can be cut with a swather rather than a haybine.

SUMMARY

Swath grazing annual spring cereals is one method of extending the grazing season to help reduce winter feeding costs. Other methods include: stockpiled native pasture, stockpiled seeded perennial forage, stockpiled sloughs and non-cropped areas on cultivated land, bale grazing, crop residues, corn grazing, and winter annuals.

Swath grazing in late fall and early winter has proven to be physically possible and economically viable for many producers. Producers considering this practice are encouraged to experiment with a small area at first, and use the information in this publication to assess the feasibility for their own operation.

Further Trials and Research

Work on testing new varieties of warm season annual crops for swath grazing should continue. Recent trials indicate these crops have good economic and production potential. Work should also begin on measuring the long-term effects of swath grazing on soil and water quality.

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Acknowledgements

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Summer Swath Grazing: A Different Approach

The majority of swath grazing is used as a late fall and early winter grazing option. A new approach to consider is swath grazing with cool season annual cereals (oats, barley) for late summer grazing. With traditional winter swath grazing, the seeding date of the crop needs to be delayed until approximately June 10 to June 15 (see section titled Seeding Date). This seeding date delays the cutting date until approximately August 15 to August 20, which reduces the length of time the feed lies in the windrow prior to the cold fall and winter temperatures. Cold temperatures prevent the feed from losing quality.

The disadvantage of the delayed seeding date for cool season cereals is a yield reduction in most years. Expect forage yield to be reduced by approximately 20 to 25 per cent compared to a mid-May seeding date (see section called Economics).

A new consideration is to seed a cool season cereal in early spring, windrow the stand by late July, and begin grazing immediately. This would provide a forage option through August and early September in situations where perennial pastures are depleted. If the windrows were not needed for grazing, they could be baled.

This option is recommended as an alternative to seeding the cereal in early spring and grazing during the vegetative stage. One trial compared forage yields under single cut (swath graze) to multiple cut (simulated summer rotational grazing) on cool and warm season annuals. For the cool season crops, total combined forage yield of the multiple clippings was 60 per cent of the single cut. For the warm season crops, total combined forage yield of the multiple clippings was 50 per cent of the single cut. These results are comparable to other unpublished trials. In terms of forage yield, it appears annuals should not be grazed during the growing season. Instead, they should be allowed to grow to optimum stage for yield and quality, then cut and swath grazed.

The economics of annuals for winter swath grazing, summer swath grazing, grazing during vegetative growth, and greenfeed have been analyzed and debated at length. Some believe greater effort should be spent on managing and utilizing more acres of perennial forages. Each producer has a unique combination of resources with different needs and costs of production, and has to determine their own best options.